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ABSTRACT

The intent of this study was to examine the effectiveness of elements of the thematic-fantasy play training paradigm in facilitating children's immediate and maintained story comprehension. Thematic-fantasy play was defined as play in which children enact themes and events not related to their everyday experience, as when they act out a fairy tale. A total of 192 children in kindergarten and first grade (balanced for sex) were randomly assigned to one of four groups: adult-directed play, peer-directed play, accommodation questions, or control. Children were read different books on three occasions and exposed to their respective treatments after each reading. Following the third session, story comprehension was measured by a 10-item criterion referenced test, a story recall task, and a sequential memory task. Maintenance effects were measured 1 week later for the first two measures. Results generally indicated that adult tuition was not an important element for players. In terms of immediate comprehension, fantasy re-enactment was generally more effective than were accommodation questions. For maintained comprehension, accommodation questions were generally as effective as the play conditions. The point is made in conclusion that results should be interpreted cautiously. (Author/RH)

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Identifying causal elements in the thematic-fantasy play paradigm

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Running head: Peer/adult play

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Abstract

The intent of the study was to examine the effectiveness of elements of the thematic-fantasy play training paradigm in facilitating children's immediate and maintained story comprehension. One-hundred and ninty-two children in grades kindergarten and one (balanced for sex) were randomly assigned to one of four groups: adult directed play, peer directed play, accommodation questions, or control. Children were read different books on three occasions and exposed to their appopriate treatments after each reading. After the third session story comprehension was measured by: a 10 item CRT, a story recall task, and a sequential memory task. Maintenance effects were measured one week later on the first two measures. Results, generally, indicated that adult tuition was not an important element for players. In terms of immediate comprehension, fantasy re-enactment was generally more effective than were accommodation questions. For maintained comprehension, accommodation questions were generally as effective as the play conditions.

Identifying Causal Elements in the Thematic-Fantasy Play Paradigm

This study attempted to identify the aspects of thematic-fantasy play which resulted in lower SES children's improved comprehension of stories read to them. Thematic-fantasy play was defined, following Saltz, Dixon, and Johnson (1977), as children enacting themes and events not related to their everyday experience (e.g., enacting a fairy tale). Previous studies have attempted to answer this same question (Saltz & Johnson, 1974; Saltz, Dixon & Johnson, 1977; Pellegrini & Galda, 1982). Saltz et al. (1977) suggested that the fantasy re-enactment element of play was the most important variable in stimulating cognitive gains. Following Piaget (1962) and others (e.g., Rubin, 1980; Rubin, Fein, & Vandenberg, in press), fantasy re-enactment is hypothesized to facilitate cognitive development because it helps children to assimilate newly encountered information. Rubin et al. (in press) further state that the fantasy transformations characteristic of thematic-fantasy play enable children to engage in decentration activities (e.g., consciously transforming their real identities to fantasy identities). Such reversible operations are thought to improve children's performance on a number of social-cognitive measures, including story comprehension.

Pellegrini and Galda (1982) suggest that children's verbal reconstructions of stories in thematic-fantasy play may be responsible for their improved story comprehension. They, along with Sachs (1980), suggested that the verbal interaction among peers characteristic of thematic-fantasy play enables children to construct narrative structures. Children use their verbal strategies and narrative schemas to later retell and sequence stories.

No causal statements about the elements of thematic-fantasy play *per se* can be made, however, from these studies since the effect of children's play was confounded by adults tutoring them in play (Rubin, 1980). Adult tutoring, as defined by Rubin, et al. (in press), has adults deliberately encouraging children to play according to predetermined criteria. It is unclear in any of these studies which variables, fantasy re-enactment, verbal reconstruction, or adult tuition in fantasy play, were responsible for the reported story comprehension gains. Thus, the first objective of this study was to examine the effects of peer and adult directed thematic-fantasy play training on children's comprehension of a story read to them.

It was hypothesized that there would be no differences between adult directed and peer directed play groups on measures of story comprehension. Research suggests that by the time children reach kindergarten, whether they are middle class (MC) or lower socio-economic status (LSES) children, they do not need an adult to help them sustain fantasy play (Fein & Stork, 1981). They are capable of sustaining play themselves; thus, adult guidance of play should not affect children's ability to enact a story and their subsequent story comprehension performance.

A second objective of the study was to determine the extent that the conflict/resolution cycle characteristic of children's thematic-fantasy play contributed to story comprehension. Rubin (1980) suggested that children's play with same-age peers typically results in their disagreeing as to who can do what. In an effort to sustain play, children typically resolve these conflicts themselves. Such a conflict/resolution cycle often results in children accommodating to their playmates' perspective of an event. As a

result of accommodating to the viewpoints of other players, children's concepts of the enacted stories should be broadened. That is, as a result of accommodating to the conflicting information, children's concepts of stories should be richer than they were before the conflict. Rubin (1980) suggested that such conflict/resolution cycles, independent of the fantasy re-enactment element, may be a causal element in play relating to improved performance on a number of social-cognitive measures, including story comprehension.

This conflict/resolution cycle can be approximated by an adult-lead accommodation questioning paradigm used by Sigel (1979) and Pellegrini (Pellegrini, 1982; Pellegrini & Green, 1980). In this paradigm children first verbally reconstruct the story by answering descriptive questions about the story. Children are made aware of conflicting versions of the story by asking them how their version of the story is different from other children's versions. They accommodate to peers' versions of the story by noting how their stories are similar to others' stories. Sigel (1979) and Pellegrini (Pellegrini, 1982; Pellegrini & Green, 1980) suggested that this series of questions enables children to become aware of conflicts between viewpoints and to accommodate to these different viewpoints.

In terms of objective 2, it was hypothesized that both of the play training conditions would be more effective facilitators of story comprehension than the accommodation questioning condition because of the additive nature of the play conditions. That is, players reconstruct stories through fantasy re-enactment and verbalizations; they also experience conflicting views of the stories from other players. Children in the accommodation questioning condition experience only two of these three

elements: verbal reconstruction of story and exposure to conflicting viewpoints.

This study will measure the effects of these variables on children's immediate and maintained comprehension of a story read to them (Brown, 1978). Aspects of children's ability to recall stories were measured immediately after the third training session and one week later. The one week maintenance period has been used in other play training studies (e.g., Dansky, 1980) and in paired associate learning studies (e.g., Pressley, 1982).

Method

Subjects

The 192 children, 96 boys and 96 girls, involved in this study all attended a predominatly LSES black school in rural Northeast Georgia. The sample was randomly selected from all children in kindergarten and grade one. The mean age, in months, for kindergarteners was 68.52 (*SD* = 4.73) and 84.21 (*SD* = 5.32) for first graders. The average Slosson IQ score was 104.333, *SD* = 15.978, for kindergarteners and 107.145, *SD* = 17.044, for first graders. Within each grade. 24 groups of four children, two boys and two girls, were formed by random assignment. The groups were then randomly assigned to one of four treatment conditions: adult directed play; peer directed play; accommodation questions; or control.

Procedure

One female experimenter conducted all training and criterion sessions. Individual groups of four children, two boys and two girls, from the same grade and same condition, were taken to a play room in their school by the experimenter. The play room was equipped with videotaping equipment. Each group of children was exposed to three separate training and two criterion sessions. During each training session the experimenter read the group a story and exposed them to the appropriate training conditions. Following Pellegrini and Galda (1982), the stories read to the children in training sessions one and two were: *The Three Billy Goats Gruff* and *The Three Bears*, respectively. After the experimenter read each book to the children they were trained in one of three conditions: adult directed play, peer directed play, accommodation

questions, or control.

In the third training session, each group of four children was taken to the same play room by the experimenter. She then read each group the traditional folk tale, Little Red Cap. After the story was read, the children were exposed to their respective training condition.

All three training sessions were videotaped. Research has shown that children will engage in self-sustained social interaction, such as peer directed play, if they are given a superordinate goal for their interaction (Little & Kendall, 1979; Bierman, Note 1). In the present study all children were given the superordinate goal of making a videotape of their interactions. Children in all conditions viewed their films immediately after the completion of their treatment sessions.

Immediately following the third training session, and the viewing of the videotapes for that session, children were exposed to the first criterion phase. In the first criterion phase, children were given a sheet with ten multiple choice criterion-referenced test (CRT) items. Each CRT question and its four possible answers were read aloud twice by the experimenter; children were told to mark one correct answer. In addition to the CRT, individual children were asked to retell and sequence the story. In the retell task, the experimenter said: I just read you a story. Tell me as much of the story as you can remember, from beginning to end. Children's retellings were audiotaped and later transcribed and scored. In the sequential memory task individual children were presented with four randomly ordered pictures from Red Cap. The experimenter told the children: Put these pictures in the order in which they appeared in the story. The experimenter wrote children's

sequences on a tally sheet. Each session of reading, training and testing lasted approximately forty minutes; no treatment sessions were systematically longer than others. Presentation of criterion measures were counter-balanced within each group.

The second criterion phase of the experiment took place one week after the first criterion phase. In the second phase, children were taken by the same experimenter to the same room. Individually, they were shown the cover of the book Little Red Cap and asked to retell the story and retake the CRT, following the instructions given in the first phase. Order of presentation was counter-balanced.

The Treatment Conditions

The adult directed play condition had the experimenter directing children's thematic-fantasy play by first randomly assigning each child to a play role. She then told them that their play episode was being video-taped and that they could watch the film after they played. Adult direction of play took the form of outside intervention into play, following procedures outlines by Smilansky (1974). That is, while the children played, the adult asked them questions, made suggestions, established contact between players, and gave directions. The adult acted as director, not player. The adult always addressed children in their fantasy roles, thus the fantasy mode was maintained. The children viewed the film at the conclusion of each play episode.

Children in the peer directed play group were also assigned play roles by the experimenter. The experimenter told them to play the story they had just

heard so they could make a film. The experimenter did not intervene into the play episodes after roles were assigned and play began. Children viewed their film at the conclusion of each play episode.

Each child in the accommodation questioning condition was first asked questions which had him/her recalling the story (e.g., What do you remember about the story?) (Sigel, 1979; Pellegrini, 1982; Pellegrini & Green, 1980). After each child in the group answered this type of question he/she was asked how his/her version of the story was different from (e.g., How's your story different from the other stories?) and similar to (e.g., How's your story like the other stories?) the stories given by the other children in the group. Questions were re-stated twice if children did not answer. All children were able to answer all questions. They, too, were told their interactions were being videotaped; they viewed the tapes at the end of each of the questioning sessions.

Control children were told to draw pictures about the story and not to talk with their peers. They, too, were videotaped and viewed the tape after each session.

Subsequent analysis of the videotapes by the experimenter and the author indicated that the amount of adult tuition, i.e., number of adult initiated utterances, in the adult directed play condition (M = 15.2) was not substantially different from the adult tuition in the accommodation questions condition (M = 13.7). In addition, both play groups correctly enacted the final story from beginning to end. That is, each play enacted the total number of story constituents in their correct sequence.

Design and Measures

The design of the study was a 2 (grade: kindergarten and first) x 2 (sex) x 4 (condition: adult directed play, peer directed play, accommodation questions, control) factorial. IQ was used as a covariate, because research has suggested that play training of LSES children is differentially effective according to children's IQ (Saltz et al., 1977; Graziano, personal communication). The dependent measures were: performance on a criterion referenced test (CRT); total number of story constituents recalled in an oral story retelling task; and a story sequential memory score. Children had two sets of criterion phase scores. In the first criterion phase, all of the above noted measures were administered immediately after the third training session; order of presentation of measures was counter-balanced. To test the maintenance of treatments a second criterion phase was used. Children were asked to retell the same story and do the same CRT as they did in the first criterion phase; both were administered one week after the last treatment. Order of presentation of measures was counter-balanced.

The criterion referenced test consisted of ten multiple choice questions; each question had one correct answer and three distractors. Questions related to different aspects of the story Little Red Cap. The ten questions were composed of two items for each of Bloom's five (1956) cognitive taxonomy areas: knowledge, comprehension, application, analysis, and evaluation. For example, What did the hunter use to cut the wolf open?, measured Bloom et al's (1956) knowledge category; How were Little Red Cap and Grandmother different?, measured Bloom et al's (1956) comprehension category. A total CRT score was derived by summing each subject's correct responses. Cronbach's alpha for the

phase 1 CRT was .82 and .85 for the phase 2 CRT.

The recall task had individual children retelling the story to the experimenter. Retellings were audio-taped and later scored following Pellegrini and Galda (1982). The experimenter broke down the story into its constituent structure (Rumelhart, 1975). There were a total of nine main constituents in the story: the setting, seven episodes, and the conclusion. Retellings were scored by the experimenter as including a constituent if the "gist" of that constituent was mentioned, irrespective of event order (Bartlett, 1932; Thorndyke, 1977). For example, when the wolf knocks at grandmother's door a conversation ensues, ending with the wolf devouring grandmother. The statement, The wolf ate grandma up, would be scored as sufficient recall for that particular constituent. Inter-rater reliability for the scoring of the story recall scores was determined by having a trained coder randomly choosing ten retelling transcripts and rescoring them. The percentage of agreement was determined by comparing the second coder's scores with the experimenter's scores. There was a 98% agreement between the experimenter's original scores and the second set of scores.

Children's sequential memory of the story was measured by their sequencing four randomly ordered pictures from the story. Each child's sequence score, following Saltz et al (1977), was determined by calculating a rank order correlation coefficient (Kendall's Tau) between the way in which each child ordered the pictures and the a priori order.

Results

The means for each criterion measure x condition x grade can be found in

Table 1.

(Table 1 about here)

The model for the analyses was a grade (2) x sex (2) x condition (4) analysis of covariance, using the general linear model. IQ scores were used as covariates. All post-hoc multiple comparison utilized Student's Newman-Keuls procedure at the .05 alpha level.

The grade (2) x sex (2) x conditions (4) ANCOVA on the total number of correct CRT items in phase 1 detected significant main effects for grade, $F(1, 175) = 69.97$, $p < .0001$, condition, $F(3, 175) = 95.78$, $p < .0001$, and a significant grade x condition interaction, $F(3, 175) = 4.17$, $p < .0017$, IQ was a significant covariate, $F(1, 175) = 9.48$, $p < .002$. The R^2 for this model was .689. Post hoc analyses on the interaction indicated that at kindergarten, the adult directed players ($M = 8.04$) scored significantly higher than did children in the peer directed play ($M = 7.17$), questioning ($M = 5.41$), and control ($M = 3.62$) groups. The peer directed players scored significantly higher than both questioning and control groups. The questioning group scored significantly higher than the control group.

At first grade, there was not a significant difference between adult ($M = 8.58$) and peer directed ($M = 8.48$) players on the phase 1 CRT. Both play groups scored significantly higher than children in both questioning ($M = 7.71$) and control ($M = 5.21$) groups. The questioning group scored significantly higher than children in the control group.

The next analysis examined CRT scores in phase 2. Like results from phase 1, significant main effects were detected for grade, $F(1, 175) = 27.24$,

$p < .0001$, and condition $F(3, 175) = 14.27$, $p < .0002$. There was also a significant grade x condition interaction, $F(3, 175)$ 3.28, $p < .02$, IQ was, again, a significant covariate, $F(1, 175) = 15.75$, $p < .0001$. The R^2 for this model was .588. Post-hoc analyses of the interaction suggested that at kindergarten, both adult ($M = 6.66$) and peer ($M = 6.63$) directed players scored significantly higher than children in the questioning ($M = 5.24$) and control ($M = 5.20$) groups. The questioning group scored significantly higher than the control group. At first grade, adult ($M = 8.42$) and peer ($M = 7.63$) directed players and children in the questioning group ($M = 7.91$) all scored higher than the control group ($M = 5.42$). There were no other between group differences.

Analyses of the total number of story constituents retold in phase 1 revealed significant main effects for grade, $F(1, 175) = 26.07$, $p < .001$, and condition $F(3, 175) = 44.18$, $p < .0001$, as well as significant sex x condition interaction, $F(3, 175) = 4.48$, $p < .0004$. The R2 was .518. Post-hoc analyses for the grade effect indicated that first graders ($M = 5.65$) recalled significantly more constituents than did kindergarteners ($M = 4.56$). For condition, both adult ($M = 6.24$) and peer ($M = 5.85$) directed players recalled significantly more constituents than children in the questioning group ($M = 5.25$), who in turn, recalled significantly more constituents than the control group ($M = 3.08$). Post-hoc analyses of the condition x sex interaction revealed a sex difference only for the peer directed play group; boys ($M = 6.56$) recalled significantly more constituents than did girls ($M = 5.14$).

The grade x sex x condition ANCOVA on retellings in phase 2 revealed

significant main effects for grade, $F(1, 175) = 42.96$, $p < .0001$, and condition $F(3, 175) = 23.23$, $p < .0001$, and a significant grade x condition interaction, $F(3, 175) = 2.99$, $p < .03$. The R^2 was .457. Within kindergarten, the adult directed play ($M = 5.27$), the peer directed play ($M = 5.01$), and the questioning groups ($M = 4.35$) all recalled significantly more constituents than did the control group ($M = 3.36$). No other between group differences were significant. Similar to the kindergarten results, first graders in adult directed play ($M = 7.41$), peer directed play ($M = 6.67$) and questioning groups ($M = 6.59$) all recalled significantly more constituents than children in the control group ($M = 9.10$). No other between group differences were significant.

The grade x sex x conditions ANCOVA on children's story sequencing scores detected a significant main effect for condition, $F(3, 175) = 25.75$, $p < .0001$; R^2 was .32. Children in both adult ($M = .92$) and peer directed ($M = .85$) play groups scored significantly higher than children in the questioning group ($M = .63$), who, in turn, scored significantly higher than the control group ($M = .43$).

Discussion

In Rubin's (1980) review of fantasy play training studies, he discusses aspects of the thematic-fantasy play paradigm which might be responsible for improving children's social-cognitive performance: adult tuition in play, fantasy re-enactment, and accommodation to peer's conflicting viewpoints. The present study experimentally manipulated those variables to determine the extent to which they affected children's immediate and maintained

comprehension of stories read to them. In this section we will first discuss the effects of adult directed and peer directed thematic-fantasy play on children's immediate and maintained story comprehension. Second, we will examine the effects of thematic-fantasy play and accommodation questioning.

Adult directed and peer directed thematic-fantasy play were equally effective in facilitating children's story comprehension on all measures except one: Kindergarteners' phase 1 CRT. Thus, the first hypothesis of the study was supported. These results, and results from observational studies (e.g., Elfferman, 1971; Fein & Stork, 1981), suggest that LSES and MC 5 year old children are capable of sustaining fantasy play on their own, without adult direction. Indeed, observational studies (see Rubin et al. for a review) suggest an inverted U developmental progression for children's ability to engage in spontaneous pretense play. It increases until 5-6 years and then decreases. Thus, the use of peer directed play as an instructional strategy may be optimal in kindergarten.

The sex x condition interaction on phase 1 retellings suggested that boys benefited more than did girls from the peer directed play experiences. These results may be explained in light of McLoyd's (1980) and others' findings (see Rubin et al. for a review of sex differences in play) that young boys, more often than young girls, tend to engage in spontaneous thematic-fantasy play (e.g., superheroes). Girls more often engage in spontaneous social dramatic play (e.g., housekeeping). Boys' more frequent experience in spontaneous thematic-fantasy play may have been responsible for their benefiting more than girls from the peer directed play condition.

The second objective of the study was to examine the effectiveness of both thematic-fantasy play conditions in relation to the fantasy-free, accommodation questioning condition. The hypothesis that the play conditions would be more effective was supported by immediate story comprehension data of phase 1 but generally not supported by the maintenance data of phase 2. On all of the phase 1 comprehension measures and on one phase 2 measure (the kindergarteners' CRT), players scored higher than did children in the accommodation question condition. It was hypothesized that the effectiveness of play, in relation to the questioning condition, was due to the additive nature of the play conditions. Children in both play conditions verbally reconstructed the stories, encountered conflicting information about the story from peers, and engaged in fantasy enactment of the stories. Children in the questioning group experienced only the first two elements.

Play and accommodation questioning conditions were equally effective in facilitating maintained story comprehension. These results suggest that the fantasy re-enactment of thematic-fantasy play was not an important element in facilitating children's maintained story comprehension. More specifically, the play conditions had children engaging in fantasy re-enactment and verbal reconstruction of stories as well as being exposed to peers' conflicting versions of the story. The questioning condition was as effective as the play conditions even though children were exposed to only two of these three experiences (i.e., verbal reconstruction and exposure to conflicting views). Thus, the addition of fantasy re-enactment to these two elements did not seem to improve significantly children's maintained story comprehension. This

finding supports Rubin's (1980) hypothesis that the fantasy-free conflict/resolution cycle, characteristic of peer play, is a causal element in the thematic-fantasy play paradigm.

Another interesting result, which was not hypothesized, was the finding that first graders' story retellings, in both phases 1 and 2, contained significantly more story constituents than did kindergarterns' retellings. This is consistent with Brown (1975) and Pellegrini and Galda (1982) who found that children's story retelling ability undergoes significant change between kindergarten and second grade.

To conclude, results indicate that adult tuition in kindergarterners' and first graders' thematic-fantasy play is not an important element in facilitating their story comprehension. Adult tuition, as Dansky (1980) has shown, may be more effective with younger children. Fantasy enactment of stories seems to be an important element affecting children's immediate story comprehension, but not their maintained comprehension. Verbal reconstruction of stories and accommodation to peers' conflicting versions of stories are the more important elements affecting children's maintained story comprehension.

In terms of extending the extant play training literature, this study should be interpreted cautiously. These results should be compared to studies using comparable samples, comparable length and type of play training sessions, and similar criterion measures.

Reference Note

1. Bierman, K. Enhancing the generalization of social skills training with peer involvement and superordinate goals. Paper presented at the 1981 biennial meeting of the Society for Research in Child Development, Boston, April, 1981.

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GRADE X CONDITION LEAST SQUARES MEANS FOR CRITERION MEASURES

	CRT		Retell		Sequence
	Phase 1	Phase 2	Phase 1	Phase 2	
	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
Kindergarten					
Adult directed	8.042	6.661	5.981	5.272	.915
Peer directed	7.170	6.633	5.322	5.012	.882
Questions	5.415	5.420	4.268	4.353	.612
Control	3.626	5.203	2.693	3.565	.413
1st Grade					
Adult directed	8.587	8.424	6.502	7.419	.944
Peer directed	8.485	7.633	6.389	6.675	.818
Questions	7.716	7.791	6.233	6.596	.651
Control	5.214	5.434	3.480	4.107	.459